DOCUMENT RESUME

ED 305 142 PS 017 856

AUTHOR Jones, Molly M.
TITLE The Longitudinal Evaluation of Early Childhood Education Interim Report: The Half-Day Child Development Program for Four-Year-Olds.
INSTITUTION South Carolina State Dept. of Education, Columbia. Office of Research.
PUB DATE Oct 88
NOTE 19p.
PUB TYPE Reports - Evaluative/Feasibility (142)

EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS *Academic Achievement; Comparative Analysis; Demography; *Developmental Programs; *Early Childhood Education; Educational Improvement; High Risk Students; Longitudinal Studies; *Preschool Children; *Program Effectiveness; Program Evaluation; State Programs; *Student Characteristics
IDENTIFIERS Half Day Programs; *South Carolina

ABSTRACT

Examined were characteristics of participants in the first four classes of South Carolina's Half-Day Child Development Program for 4-Year-Olds. The first- and second-grade experiences of children who participated in the pilot class of 1983-84 were also investigated. Participants in 1983-84 were 1,050 children in 18 school districts; in the 1988-89 school year the majority of those children were in Grade 4. A comparison group was formed by random selection of 5,000 children who attended the first grade in 1986-87. Results indicated that the majority of program participants were children whose economic, social, and educational backgrounds pointed to a high risk of academic difficulty. In spite of their high risk levels, these participants demonstrated academic achievement similar to that of typical South Carolina students with similar demographic characteristics but lower degrees of educational and economic risk. Reading and mathematics test scores have provided positive assurance that the program is successfully improving the academic outlook for participants. The normal rate of grade repetition shown by these children indicates a positive program effect. (RH)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

ED305142

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

X This document has been reproduced as received from the person or organization originating it.

☐ Minor changes have been made to improve reproduction quality.

• Points of view or opinions stated in this document do not necessarily represent official OERI position or policy.

THE LONGITUDINAL EVAULATION OF EARLY CHILDHOOD EDUCATION
INTERIM REPORT

The Half-Day Child Development Program For Four-Year-Olds

Office of Research
Paul D. Sandifer
Director

Division of Administration and Planning
Robert R. Hill
Deputy Superintendent

South Carolina Department of Education
Charlie G. Williams
State Superintendent
Columbia, South Carolina
October, 1988

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY
S.C. State Dept. of Educ.
TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

South Carolina Department of Education
An Equal Opportunity Agency

PS 016356

THE OFFICE OF RESEARCH REPORT SERIES

THE LONGITUDINAL EVALUATION OF EARLY CHILDHOOD EDUCATION INTERIM REPORT

The Half-Day Child Development Program For Four-Year-Olds

Vana Meredith Dabney
Chief Supervisor
Educational Assessment Section
Office of Research

John M. Finch
Supervisor
Technical Support Unit

Prepared by

Molly M. Jones
Education Program Specialist
Technical Support Unit

THE HALF-DAY CHILD DEVELOPMENT PROGRAM FOR FOUR-YEAR-OLDS

Characteristics of Participants and School Achievement of the Pilot Class through Grade 2

I. Background

During the 1983-84 school year in South Carolina, 1,050 children in 18 school districts participated in the pilot year of the Half-Day Child Development Program for Four-Year-Olds. While other public school programs for four-year-olds had preceded it in South Carolina, this program elicited a long-range statewide commitment to its purpose: that of providing an early, positive intervention in the school experience of children with the most extreme levels of academic risk. The Education Improvement Act of 1984 included both funding and direction for the program as part of South Carolina's major, nationally acclaimed public education initiative of the 1980's. The political and educational leadership of the State acted affirmatively in response to research findings which predicted that such a program would prove to be not only educationally sound but also a good investment.

The Half-Day Child Development Program for Four-Year-Olds was conceived specifically for children at greatest risk of failing in our public schools. Initially the limited funding was allocated to those districts having the highest percentages of children scoring "not ready" on the BSAP school readiness test (Cognitive Skills Assessment Battery, or CSAB). As broader funding has been available, all school districts have had the option of providing the program to those children who are most likely to be unready for first grade activity. Table 1 shows the growth of district and student participation in the program.

Table 1

Student and District Participation
Half-Day Child Development Program for Four-Year-Olds

	Class 1 1983-84	Class 2 1984-85	Class 3 1985-86	Class 4 1986-87	Class 5 1987-88
Students	1,050	3,365	6,715	7,943	8,451
Districts	18	41	61	69	72

Though uniform criteria for participation have not been mandated, guidelines have been provided by the State Department of Education to ensure that the program is made available to the children who need it most. In selecting participants for the Half-Day Program, school districts are

advised to identify from the applicants those children most at risk. A developmental screening instrument is required to be used, along with supplementary information about the child's family such as education and income level. Districts are required to actively recruit those children with the greatest degree of academic risk. Thus, by design, the participants are children who would be likely to achieve at substantially lower levels than would typical children of the same age were it not for the program intervention.

II. Assessing Progress

This year, the 1988-89 school year, the majority of those who participated in the pilot Half-Day Program are in Grade 4. During the pilot year of the program, the selection criteria, teacher inservice training, and curriculum implementation were in formative stages. Previous assessments of the program have each taken a different perspective. The recent Executive Summary prepared by the Office of Research (State Department of Education, October 1987) looked at the Grade 1 experience of all students in the pilot class who were eligible for free lunch, comparing them to a statewide sample of free-lunch students who did not participate in this or other public pre-school programs. The report noted increased achievement through Grade 1 among some subgroups of free-lunch students in the program.

In a study conducted by Dr. Steve Barnett and Ms. Ellen Frede, the experience of a sample of students in the third

class of the program (1985-86) was analyzed, comparing them with students on the waiting lists for the same school centers. Barnett and Frede concluded that participation in the program has a positive effect on school readiness at least through Grade 1 ("Longitudinal Effects of Public Preschool Programs"; paper presented at AERA, April 1988). This study also found an important association between quality of implementation and program effectiveness.

The assumptions of many statistical procedures require that participants in compared groups are either assigned randomly or matched on important characteristics. All evaluations of the Half-Day Program, including the present study, are limited by the fact that there exists no equivalent group of non-participants to whom program students can be compared. Because districts deliberately recruit and admit those students who have the greatest degrees of educational risk, any selected comparison group will consist of students who, on the whole, have lesser degrees of risk. For this reason, statistical findings should be considered good, but not exact, indicators of program effects.

However, there is much available information about South Carolina students of all backgrounds which can assist us in assessing program effectiveness. This study will look at how similar the achievement of program students is to that of typical South Carolina students of the same age. For this purpose a comparison group of 5,000 students was

randomly selected from all students who did not attend a public preschool and who took the BSAP readiness test in Grade 1 in 1985. Data on the entire population of same-age students in South Carolina are also utilized. This study focused primarily on two questions:

(1) Are the children who are being served by the program those who most need the program, i.e., those at greatest academic risk? and

(2) How well is the program succeeding in modifying their extreme degrees of risk?.

Most program participants are young children who live in continuing poverty, whose parents are educationally disadvantaged, who enter preschool with indications of developmental needs, and who may continue to encounter reduced expectations and opportunities because of their backgrounds. To expect these children to display outstanding academic achievement as a result of a preschool experience is not realistic. Research shows, however, that we can realistically expect to hold these children in the mainstream of our public education system, helping them break long-standing cycles of educational defeat. With this expectation, we will assess the program's effectiveness in reaching high-risk four-year-olds and in modifying their school experience, enabling them to achieve at levels resembling those of typical South Carolina students.

III. Methods and Results

Each year beginning with the 1983-84 school year, the Office of Research has conducted a survey of schools and students participating in the Half-Day Program. To study the characteristics and experience of the pilot Half-Day class (1983-84), a random sample of 5,000 Grade 1 (1986-87) children who took the BSAP readiness test (CSAB) but did not participate in a public four-year-old preschool was selected as a comparison group of typical students. The program students were matched to their Grade 1 CSAB test data (1986-87), and both program and comparison groups were matched to Grade 1 and Grade 2 BSAP achievement test data. A successive combination of computer and hand-matching was used to obtain the highest and most accurate degree of matching possible. Table 2 summarizes the results of the matching process.

Table 2

Half-Day Child Development Program for Four-Year-Olds
Results of Matching 1983-84 Program and Comparison Students
To BSAP Grade 1 and Grade 2 Test Data

	Half-Day Students	Comparison Group
1983-84 survey data	895	
Randomly selected sample		5,000
Matched to Gr.1 CSAB 1985	749 (84%)	5,000
Matched to Gr.1 BSAP 1986	721 (81%)	4,701 (94%)
Matched to Gr.2 BSAP 1987	536	3,732
Matched to Gr.1 BSAP 1987 (repeating Grade 1)	156	694
Total matched to 1987 data	692 (77%)	4,426 (89%)

Available information on characteristics of students in the first four years of the program is summarized in Table 3, along with characteristics of typical students of the same age in South Carolina. Data on family income, mother's education, and child's developmental characteristics (DIAL-R) were not available for the first two program years but were included in the program survey beginning with students in the 1985-86 program (Class 3). Data for typical South Carolina students were obtained from BSAP test files and, where indicated, from 1980 census results (Detailed Population Characteristics, South Carolina, 1980 Census of the Population).

Table 3

Half-Day Child Development Program for Four-Year Olds

Characteristics of Participating Students and Typical South Carolina Public School Students

	Class 1 1983-84	Class 2 1984-85	Class 3 1985-86	Class 4 1986-87	Students in Grade 1 (1985-86)
% Male	53%	53%	50%	53%	51% *
% Black	75%	78%	72%	66%	43% *
% Mothers HS Grads	NA	NA	71%	71%	75-80% **
Median Family Income	NA	NA	slightly under $10,000	slightly over $10,000	$14-16,000 **
% F/R Lunch	72%	NA	NA	NA	49% *
Median DIAL-R	NA	NA	46	42	55-60 ***

NA Not available
* 1985-86 BSAP data for non-repeaters
** 1980 Census data
*** Mardell-Czudnowski, C.D. & Goldenberg, D.S. DIAL-R (Developmental Indicators for the Assessment of Learning Revised) Manual, 1983 edition.

Even though the mother's education and family income figures for typical South Carolina students undoubtedly have increased since the 1980 estimates were made, a strong contrast is still evident between the risk levels of program students and those of the population in general. The 1980 Census indicates that the median family income of a typical student of the same age is fifty percent higher than that

reported for Four-Year-Program students. Also, forty-seven percent more program students were eligible for lunch assistance in Grade 1 than were typical students, while their DIAL-R developmental indicators and the educational level of their mothers were notably lower than those of typical students. (The expected range of DIAL-R results for children age four-and-a-half is approximately 40 to 70.) Free or reduced price lunches are available to a wide range of income levels, extending even to those over $30,000 with large families. The income gap between families of program students and those of typical students indicates that even typical students who are eligible for lunch-assistance are likely to have a financial advantage over eligible program students. Examination of their levels of poverty, low parental education, developmental characteristics, and minority status clearly indicates that a large proportion of children in the program are members of the targeted high-risk population.

Test results for Grades 1 and 2 are shown in Table 4 for Four-Year Program participants and for the randomly selected comparison group of typical students. Results are summarized by subgroups and for total groups. Percents of each group scoring "ready" on CSAB (Grade 1) and percents meeting the standard for BSAP reading and mathematics in Grades 1 and 2 (scale score of 700 or above) are shown. The number of students in each subgroup is shown in an expanded table in Appendix A.

Table 4.

TEST RESULTS FOR HALF-DAY FOUR-YEAR-OLD PROGRAM PARTICIPANTS (PILOT CLASS OF 1983-84) WITH A COMPARISON GROUP OF TYPICAL SOUTH CAROLINA STUDENTS GRADE 1 CSAB AND BSAP (1985-86) AND GRADE 2 BSAP (1986-87)

	Grade 1 CSAB % Ready		Grade 1 BSAP % Meeting Standard				Grade 2 BSAP % Meeting Standard			
			READING		MATHEMATICS		READING		MATHEMATICS	
	Program	Compare	Program	Compare	Program	Compare	Program	Compare	Program	Compare
Black	57.1	59.9	70.3	73.4	74.1	75.8	81.0	83.0	81.5	81.0
Non-black	75.9	83.8	79.1	88.4	82.1	90.7	87.5	93.1	90.8	94.0
Male	54.2	71.4	67.2	79.0	72.7	82.9	79.5	86.2	82.7	87.8
Female	71.3	77.9	78.8	86.2	80.2	86.9	85.8	92.7	85.5	90.9
F/R-lunch	56.3	59.6	70.9	71.9	73.7	76.5	79.7	82.1	82.3	81.6
Full-paying	76.4	85.9	77.4	91.9	83.1	92.3	88.3	94.5	87.3	94.7
All students	62.2	74.5	72.7	82.5	76.3	84.8	82.8	89.5	84.1	89.4

Percents of Black students or lunch-assisted students scoring "ready" on CSAB or meeting the standard on BSAP achievement tests were not significantly different between program and comparison groups ($p > .1$). In other words, although students in the program generally had higher levels of risk than did students who were not in the program, the Black and lunch-assisted students in the program fared as well as did those not in the program. By Grade 2, the program students in these categories outscored the non-program students in Mathematics, though not by a significant amount. Not surprisingly, the students whom the program helped most were those with the least access to other resources for school success. In other categories, those in which typical students outscored program students, the score differences reflect primarily the higher-than-average scores of the comparison students who are favored with developmental advantages and/or greater access to other

resources for school success. The CSAB scores of males in the program reflect the effect of their usual developmental lag behind females in early grades, combined with the suppressing effects of their other high risk factors. By Grade 2 their scores are more similar to other groups.

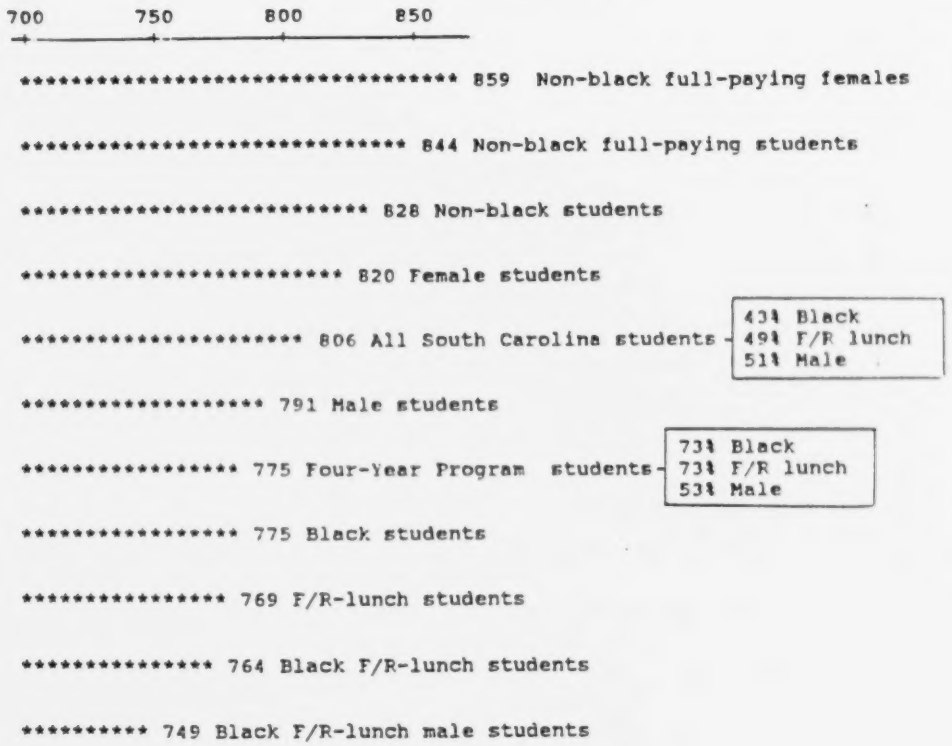
An analysis of variance showed that race, sex, and lunch-payment status all were significantly related to the measures of readiness and achievement. Logistic regression enables us to examine the association of program participation with student achievement, while adjusting simultaneously for unequal proportions of students in the categories of race, lunch, and sex. When this method was used, no significant difference was found in the likelihood of program or comparison students scoring "ready" on CSAB or meeting the standard on BSAP Mathematics in Grade 1 ($p > .05$). Comparison students were slightly more likely to meet the standard for BSAP Grade 1 Reading. In Grade 2, when similarly adjusted, there was no significant difference in the likelihood of program or comparison students' meeting the standard in either Reading or Mathematics.

Figure 1 shows the standing of the total group of Half-Day Program students among various statewide subgroups of students who took BSAP Reading tests in Grade 1, 1986, and Grade 2, 1987. The effect of multiple academic risk factors is dramatically illustrated in the graduated mean Reading scale scores. Note that Four-Year Program students scored at or above the levels of all Black students and all lunch-

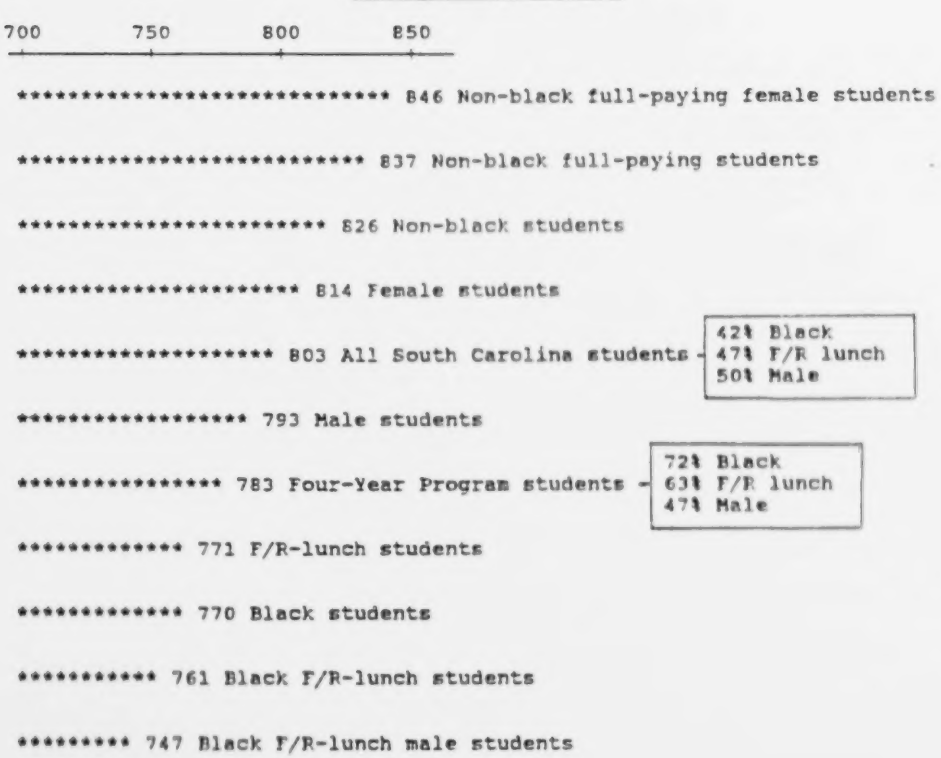
Figure 1

MEAN BSAP READING SCORES
FOR SUBSETS OF SOUTH CAROLINA STUDENTS (NON-REPEATERS)

GRADE 1 - SPRING 1986



GRADE 2 - SPRING 1987



assisted students in both grades. The contrast in demographic characteristics of program students and typical students in Grades 1 and 2 is shown.

The changes in the demographic composition of the Half-day Program students between Grades 1 and 2 in Figure 1 are a result of the loss of students who repeated Grade 1 in 1987. Of the repeating program students, 83% were eligible for free or reduced-price lunches, 79% were Black, and 65% were male.

Of students who were matched to BSAP test data in Spring, 1987, 22.5% of the program students were repeating Grade 1, while 15.7% of the comparison students were repeating Grade 1. The remaining students were matched with Grade 2 data. When statistically controlled (using logistic regression) for proportions of students in race, sex, and lunch payment categories, the likelihood of a student's repeating Grade 1 was not significantly different for program and comparison groups. This was true even though program students had higher levels of risks which could not be statistically controlled (e.g., mother's education, child's developmental characteristics, and family income). In some subgoups the proportions of repeaters were actually lower for program students than for comparison students, though differences were not statistically significant.

Detailed information on the analyses described in this report is available from the Office of Research, South Carolina Department of Education.

IV. Conclusions

This study examined the characteristics of participants in the first four classes of the Half-Day Child Development Program for Four-Year-Olds, and also the first and second grade experiences of those children who participated in the pilot class of 1983-84. The results indicate that the majority of program participants were children whose economic, social, and educational backgrounds point to a high risk of academic difficulty. In spite of their risk levels, these participants have demonstrated academic achievement similar to that of typical South Carolina students with similar demographic characteristics but lesser degrees of educational and economic risk. Although Reading and Mathematics test scores are but one limited indicator of program success, these scores have provided positive assurance that the program is successfully improving the academic outlook for participants. The normal grade repeating rate shown by these children has also indicated a positive program effect.

The study will be extended to the school experience of subsequent classes as the program matures and continues to develop its potential.

APPENDIX A

TEST RESULTS FOR HALF-DAY FOUR-YEAR-OLD PROGRAM PARTICIPANTS (1983-84) AND COMPARISON GROUP OF TYPICAL SOUTH CAROLINA STUDENTS GRADE 1 CSAB AND BSAP (1985-85) AND GRADE 2 BSAP (1986-87)

GRADE 1 CSAB

	Program Students			Comparison Group		
	Total	# Ready	% Ready	Total	# Ready	% Ready
Black	546	312	57.1	1,934	1,159	59.9
Non-Black	203	154	75.9	3,062	2,565	83.8
Male	397	215	54.2	2,574	1,837	71.4
Female	352	251	71.3	2,422	1,887	77.9
F/R lunch	529	298	56.3	2,157	1,285	59.6
Full-paying	220	168	76.4	2,843	2,442	85.9
All students	749	466	62.2	5,000	3,727	74.5

GRADE 1 BSAP READING

	Program Students			Comparison Group		
		Above Standard			Above Standard	
	Total	#	%	Total	#	%
Black	525	369	70.3	1,846	1,355	73.4
Non-Black	196	155	79.1	2,854	2,523	88.4
Male	381	256	67.2	2,407	1,902	79.0
Female	340	268	78.8	2,293	1,976	86.2
F/R lunch	526	373	70.9	2,204	1,585	71.9
Full-paying	195	151	77.4	2,491	2,290	91.9
All students	721	524	72.7	4,700	3,878	82.5

GRADE 1 BSAP MATHEMATICS

	Program Students			Comparison Group		
		Above Standard			Above Standard	
	Total	#	%	Total	#	%
Black	525	389	74.1	1,844	1,398	75.8
Non-Black	195	160	82.1	2,852	2,586	90.7
Male	381	277	72.7	2,405	1,994	82.9
Female	339	272	80.2	2,291	1,990	86.9
F/R lunch	525	387	73.7	2,201	1,684	76.5
Full-paying	195	162	83.1	2,490	2,299	92.3
All students	720	549	76.3	4,696	3.984	84.8

Appendix A - continued

GRADE 2 BSAP READING

	Program Students			Comparison Group		
		Above Standard			Above Standard	
	Total	#	%	Total	#	%
Black	384	311	81.0	1,326	1,100	83.0
Non-Black	152	133	87.5	2,403	2,237	93.1
Male	254	202	79.5	1,861	1,605	86.2
Female	282	242	85.8	1,868	1,732	92.7
F/R lunch	339	270	79.7	1,507	1,237	82.1
Full-paying	197	174	88.3	2,212	2,091	94.5
All students	536	444	82.8	3,729	3,337	89.5

GRADE 2 BSAP MATHEMATICS

	Program Students			Comparison Group		
		Above Standard			Above Standard	
	Total	#	%	Total	#	%
Black	384	313	81.5	1,327	1,075	81.0
Non-Black	152	138	90.8	2,402	2,257	94.0
Male	254	210	82.7	1,863	1,636	87.8
Female	282	241	85.5	1,866	1,696	90.9
F/R lunch	339	279	82.3	1,507	1,230	81.6
Full-paying	197	172	87.3	2,212	2,094	94.7
All students	536	451	84.1	3,729	3,332	89.4